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January 2, 2008

Ref: EPR-N

Mr. Ray Nation, Deputy Superintendent
Bureau of Indian Affairs
Wind River Agency
P.O. Box 158
Fort Washakie, WY 82514

RE: Riverton Dome Coal Bed Natural Gas and Conventional Gas Development Project Draft Environmental Impact Statement CEQ # 20070454

Dear Mr. Nation:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the Bureau of Indian Affairs (BIA) Draft Environmental Impact Statement (Draft EIS) for the Riverton Dome Coal Bed Natural Gas and Conventional Gas Development Project. While EPA participated as a cooperating agency in the development of the Draft EIS, EPA's review and comments are provided in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

The Draft EIS evaluates the potential site-specific and cumulative environmental impacts associated with the construction, completion and production of up to 326 coalbed natural gas (CBNG) wells and 20 conventional gas wells on up to 1,511 acres of new disturbance in the Riverton Dome Project Area (RDPA). The RDPA encompasses approximately 13,800 acres and is located approximately five miles southeast of the city of Riverton, Wyoming. The RDPA is located within the exterior boundaries of the Wind River Indian Reservation (WRIR) which is home to the Eastern Shoshone and Northern Arapaho Tribes.

In addition to a No Action Alternative, the Draft EIS considers two action alternatives. Under Alternative A, Devon Energy and Production Company (Devon) proposes to develop up to 326 CBNG and 20 conventional gas wells on its existing leases and on additional leases it has formally requested from the Eastern Shoshone and Northern Arapaho Tribes. Alternative B considers development of up to 151 CBNG wells and 20 conventional wells on Devon's existing leases. Alternative B, development of existing leases, is BIA's Preferred Alternative.

During the public scoping process in October 2005, EPA, the Tribes, and the public raised numerous concerns regarding potential impacts to water quality from the proposed surface discharge of produced water. As the Draft EIS developed, Devon Energy agreed to eliminate surface discharge of produced water as an option. For the proposed project, the Draft EIS evaluated the impacts of underground injection of the produced water with secondary disposal of water in two existing evaporation ponds. The decision to dispose of the produced water via underground injection resolved many of EPA's concerns regarding potential impacts to surface water quality and aquatic wildlife. However, if the produced water management for all or part of the project is changed, the environmental impacts will change significantly as well and BIA will need to supplement the NEPA analysis conducted for the proposed project. Surface discharge of the CBNG water would lead to profoundly different potential impacts to the WRIR surface water quality and aquatic habitats. This may also be true for construction of any additional evaporation ponds.

EPA's primary remaining concern is that the air quality analysis may have underestimated impacts to air quality from particulate matter. Based on information provided by the Wyoming Department of Environmental Quality (DEQ), it has come to EPA's attention that more recent and more representative background air quality data for particulate matter (PM_{10} and $PM_{2.5}$) exists. The more recent 2005 monitoring data from Lander suggest significantly higher background concentrations of particulate matter than the 2001 Cheyenne data used in the Draft EIS air quality modeling analysis. EPA recommends the air quality analysis in the Final EIS incorporate the more recent and more representative background concentrations for particulate matter (PM_{10} and $PM_{2.5}$.)

EPA is concerned about particles that are 10 micrometers in diameter or smaller (PM_{10} and $PM_{2.5}$) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. It is important that the Riverton Dome air quality analysis adequately estimate the potential impacts to air quality so that necessary measures may be taken to reduce impacts, should concentrations exceed a National Ambient Air Quality Standard (NAAQS). If the near-field, far-field and/or cumulative analysis should exceed the PM_{10} or $PM_{2.5}$ 24-hour or annual standards when considered with the more representative background concentrations, mitigation measures to reduce the impact will need to be identified in the Final EIS and implemented with the Riverton Dome project.

In addition to air quality, EPA has identified several remaining concerns which are provided in the attachment to this letter. These concerns include environmental justice, impacts to cultural resources, soil resources, and water quality. Should the proposed project proceed, we believe it is incumbent upon BIA, BLM and the EPA to ensure that all necessary actions and mitigation measures are taken to minimize the environmental impacts to the land, air and water of the WRIR. It is in this spirit that EPA provides the detailed comments contained in the attachment.

Consistent with Section 309 of the Clean Air Act, it is EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action, EPA is rating this Draft EIS as Environmental Concerns – Insufficient Information (EC-2). The "EC" rating indicates that the EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. The "2" rating indicates that EPA has identified additional information, data, analyses or discussion that should be included in the Final EIS. A full description of EPA's EIS rating system is enclosed.

If you have any questions regarding our comments or the rating, please do not hesitate to call me at 303-312-6004 or Joyel Dhieux, the NEPA Lead Reviewer for this project, at 303-312-6647.

Sincerely,

/signed/

Larry Svoboda
Director, NEPA Program
Ecosystems Protection and Remediation

Enclosures

Detailed Comments by the Region 8 Environmental Protection Agency
Draft Environmental Impact Statement
Riverton Dome Coal Bed Methane and Natural Gas Project
Wind River Reservation, Wyoming

Air Quality

EPA recommends the air quality analysis incorporate more recent and more representative background concentrations for particulate matter (PM_{10} and $PM_{2.5}$.) The PM_{10} and $PM_{2.5}$ background concentrations used in the Draft EIS air quality modeling analysis were collected in Cheyenne in 2001 (Table 4-1, Air Quality Technical Support Document). Based on information provided to EPA and BIA by the Wyoming Department of Environmental Quality, we understand more representative data for PM_{10} and $PM_{2.5}$ was collected at Lander in 2005. The data collected at Lander suggest background PM_{10} values of 51 and 21 $\mu g/m^3$ for the 24-hour and annual averaging periods, respectively. The $PM_{2.5}$ data collected at Lander indicates background concentrations of 30 $\mu g/m^3$ for the 24-hour averaging period and 8 $\mu g/m^3$ for the annual averaging period. By comparison, the PM_{10} data collected in Cheyenne from 2001 provided background concentrations of 33 and 16 $\mu g/m^3$ for the 24-hour and annual averaging periods, respectively. The $PM_{2.5}$ data collected in Cheyenne in 2001 provided background concentrations of 13 and 5 $\mu g/m^3$ for 24-hour and annual averaging periods, respectively.

The background concentrations monitored at Lander are significantly higher than the background concentrations from Cheyenne which were used in the Draft EIS. EPA is concerned the air quality analysis may have underestimated predicted impacts from the proposed action on ambient air concentrations of PM_{10} and $PM_{2.5}$. If the near-field, far-field and/or cumulative analysis should exceed the PM_{10} and/or $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) when considered with the more representative background concentrations, mitigation measures to reduce the impact will need to be identified in the Final EIS and implemented with the Riverton Dome project.

In Tables 4-3.2, 4-3.3 and 5-3, the Draft EIS compares the proposed action to the NAAQS. The $PM_{2.5}$ standards listed in these tables are out-of-date. The air quality modeling results should be compared to the current $PM_{2.5}$ 24-hour standard of 35 $\mu g/m^3$ and the annual standard of 15.0 $\mu g/m^3$. Please update these tables, and any additional comparison with the NAAQS, in the Final EIS. Please also note EPA revoked the PM_{10} annual standard effective December 17, 2006.

Rather than complete a project-specific analysis, the Draft EIS incorporates the ozone analysis completed in early 2007 for the Pinedale Anticline Draft Supplemental EIS. In EPA's review of the Pinedale Anticline Draft Supplemental EIS, EPA raised concerns that the ozone analysis was conducted using a 36 km grid spacing. EPA recommended BLM consider conducting a more refined ozone modeling analysis. An analysis using 12 km grid cells rather than the 36 km grid cells would more accurately depict the geography of the area.

Terrestrial Acid Deposition

The Draft EIS compares predicted nitrogen and sulfur deposition to the Forest Service (Fox *et al* 1989) threshold values of 3 kilograms per hectare per year (kg/ha/yr) for total sulfur and 5 kg/ha/yr for total nitrogen. However, EPA is concerned these thresholds are set too high. EPA recommends NEPA analyses also include comparisons to the National Park Service and the U.S. Fish and Wildlife Service Deposition Analysis Thresholds (DATs) which have been developed for evaluating contribution of additional nitrogen and sulfur to deposition in Class I areas. The DATs for both sulfur and nitrogen in Western Class I areas are 0.005 kg/ha/yr.

Environmental Justice

An Environmental Justice analysis should evaluate the possibility of disproportionately high and adverse human health and environmental effects of an action on minority and low income populations. As part of the WRIR, the RDPA is in close proximity (within one mile) to Tribal housing at Beaver Creek. EPA recommends identifying the housing development on the maps included in Chapter 2. In addition, EPA recommends the Final EIS: include a discussion specific to the Beaver Creek housing development and any other proposed housing in the area; identify with specificity any potential impacts to residents of this development (ie. visual impacts, noise, traffic, air toxics, drinking water, etc.); and indicate how these impacts compare to the larger community. This approach would help to clearly identify any potential impacts to the housing development and would directly answer many of the questions from citizens living near the RDPA.

Hunting

The Draft EIS notes that the results of a 2004 Hunter Satisfaction Survey conducted for Tribal members within the WRIR revealed that nine out of ten people hunted primarily as a source of food, rather than for recreation. The Draft EIS also concludes that CBNG development within the RDPA will impact hunting activities in the area. The Final EIS should disclose what acreage of lands are available for hunting; what areas will remain available without the proposed development; and what the cumulative impacts to hunting lands may be with the additional development activities on the WRIR. This level of analysis is particularly important given the results of the study and the potential impacts of the development on Tribal food sources. With this additional information, the Final EIS should also expand on the discussion of probable impacts to Tribal members and hunting.

Cultural Resources

The Draft EIS acknowledges that less than three percent of the RDPA has been surveyed for cultural resources and that survey results to date may not be representative of the RDPA as a whole. With little information available, it is difficult to draw broad conclusions on the potential impact of surface disturbance. Therefore, statements in the Draft EIS that potential impacts from all three alternatives are likely to be negligible seem overstated. EPA recommends the Final EIS include a more detailed discussion on the process for protecting cultural resources within the

RDPA prior to approval of well pad, pipeline and road construction. The Final EIS should include a thorough discussion regarding the scope of the cultural surveys that will be conducted prior to any land disturbance, the avoidance policies that are in place and the range of mitigation measures that will be implemented if avoidance is not possible.

West Nile Virus

Evaporation ponds can potentially become a breeding ground for mosquitoes which carry West Nile virus. EPA recommends the Final EIS include discussion of this possibility in Section 4.16 Health and Safety as well as Section 4.9 Wildlife and Fisheries and 4.10 Threatened/Endangered Species/Special Status Wildlife Species. The Final EIS should also identify mitigation measures that may be implemented to address this concern.

Dust-Suppression Water

EPA recommends including a Best Management Practice (BMP) requiring that relatively high-quality water be used for surface application to roads and well pad sites for the purpose of dust-suppression. Waters with high salt and other pollutant loads should not be directly applied to the surface where they could be transported to flowing surface waters during significant precipitation events.

Water Quality

The calculated sodium-adsorption ratio (SAR) value of the produced water is extremely high at 135. The Draft EIS suggests that the produced water is treated before it is discharged into the evaporation ponds. EPA recommends the Final EIS include more detailed information on the water treatment methods. Specifically, the Final EIS should clarify whether the proposed treatment would address SAR, and should identify the estimated SAR concentration of the water in the evaporation ponds. This information is particularly important as the southern most evaporation pond appears to be at the edge of the Beaver Creek annual recharge area.

Wind River Water Quality Standards

In the event of an accidental spill or incidental release of pollutants, Devon will need to comply with all applicable environmental laws and guidance in performing clean-up, restoration, and impact assessment activities. We note that the Wind River Draft Water Quality Standards are currently out for public comment through January 2008 and are anticipated to be Tribally-adopted during the Spring of 2008. A discussion of these standards should be included in the Final EIS.

Produced Water Disposal

The Draft EIS identifies underground injection as the preferred disposal method of produced water from the coalbed natural gas (CBNG) wells. EPA recommends the Final EIS clarify how much water has been injected into the underground injection well to date and identify whether there are any capacity issues.

Hazardous Materials in Fracturing Fluids

Information contained in Appendix F, the Hazardous Materials Management Plan, suggests diesel fuel would be used as a component of fracturing fluids. Based on discussions with Devon Energy, EPA understands this may not be correct. EPA recommends the Final EIS clarify whether diesel fuel will be used as a component of the fracturing fluids. If diesel fuel is used, the Final EIS should expand on the potential impacts to water quality from fracturing with diesel and should include a discussion of fracturing fluid alternatives that may be used in lieu of the diesel additive. As a fracturing fluid, diesel fuel may pose environmental concerns.

Soil Resources

EPA notes that reclamation is very difficult to establish in the RDPA due to generally low rain, long-term drought, and the Wyoming big sagebrush vegetation. Given these considerations and the difficulty experienced in reclamation for the ten pilot wells, the Final EIS should address how timely reclamation will be addressed as the project moves forward. In particular, the Final EIS should address how, and by whom, reclamation will be monitored and enforced.

The Draft EIS notes that where possible, powerlines will follow roads. Every effort should be made for powerlines and pipelines to follow roads, even if it is more costly, to minimize surface impacts. Similarly, every effort should be made to co-locate CBNG wells and conventional gas wells on well pads. This is acutely important in the project area where reclamation is difficult to establish.

Migratory Birds

The Draft EIS contains contradictory information on whether both evaporation ponds will include a bird-avert system. On page ES-3, the Draft EIS suggests the second evaporation pond will not include a bird avert system, but will only contain treated produced water. On pages 2-67 and 4-59, the discussion suggests impacts to migratory birds from contact with produced water would be reduced with implementation of a bird-avert system at both of the evaporation ponds. Please clarify in the Final EIS whether a bird-avert system will be installed on the second evaporation pond.

Management of Drilling Muds and Cuttings

Drilling mud pits that remain open, un-reclaimed, and un-monitored can pose a hazard to wildlife and the environment. EPA recommends the discussion on page 2-21 on drilling muds and cuttings be expanded to include how these pits will be monitored for hydrocarbons, reclaimed, the specific timeframe for backfilling the pits, and the timeframe for reclamation.

Cumulative Analysis

The cumulative impacts analysis should include more specificity regarding the potential cumulative impacts from the proposed action and the past, present, and reasonably foreseeable future activities in the vicinity of the proposed project. In addition to the existing oil and gas activities noted in Chapter 5.2.6, a Clean Air Act major source facility and the Riverton Dome Gas Plant are also in the vicinity of the proposed project. Please clarify how these facilities and any other relevant sources were included in the cumulative air, water, environmental justice, impact analyses.

The cumulative analysis should also provide a comparison of the no action alternative with the action alternatives. For the air quality cumulative analysis presented in Section 5.3.2 and in Tables 5-4 through 5-9, it is unclear what alternative is presented. Please clarify these tables and discussion.

EPA's GasSTAR Program

EPA recommends the Final EIS encourage the project developers to participate in EPA's Natural Gas STAR. Through the GasSTAR Program (www.epa.gov/gasstar), EPA works with companies that produce, process, transmit and distribute natural gas to identify and promote the implementation of cost-effective technologies and practices to reduce emissions of methane, a potent greenhouse gas.